

**Sierra, Natalie**

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**From:** biosolids-bounces@lists.casaweb.org on behalf of Greg Kester [gkester@casaweb.org]  
**Sent:** Friday, May 07, 2010 4:07 PM  
**To:** biosolids@lists.casaweb.org  
**Subject:** [CASA Biosolids] FW: Biosolids  
**Attachments:** ATT528857.txt

Hello everyone – Thought I would share this positive perspective on biosolids compost use from a researcher at the University of Washington. Have a wonderful weekend and thanks to Bob Gillette for sharing this! - Greg

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**From:** Robert Gillette [mailto:RGillette@carollo.com]  
**Sent:** Friday, May 07, 2010 3:35 PM  
**To:** 'gkester@casaweb.org'; Todd Jordan; Rebecca Overacre  
**Subject:** Fw: Biosolids

Good article from Matt  
Bob

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**From:** Matthew Cotton <matt@mattcotton.com>  
**To:** Matthew Cotton <matt@mattcotton.com>  
**Sent:** Fri May 07 11:15:01 2010  
**Subject:** Biosolids

Dear Friends:

I came across this blog post from Kate Kurtz in the Seattle Post-Intelligencer. (Kate is currently pursuing a Masters Degree under Sally Brown, but you might remember her as a lab tech at Soil Control Labs.)

I thought Kate's post was well written, but more importantly written in plain English that the average, non-industry person might understand.

Enjoy.

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**Why I love biosolids**

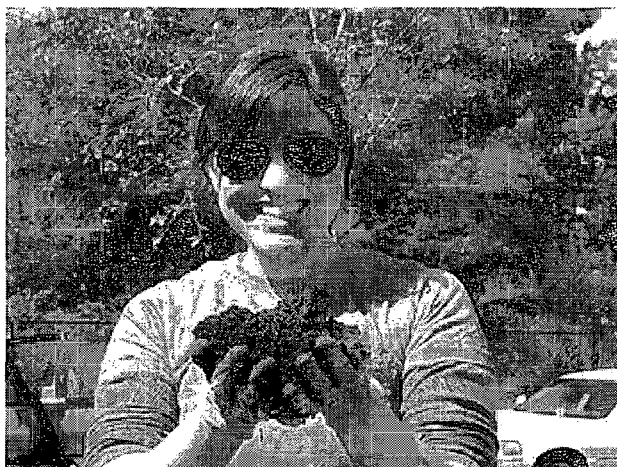
6/25/2010

DUPLICATE  
NOT AN OFFICIAL RECORD



Bok choy from my home garden grows in a combination of native topsoil and biosolids compost.

In the last few weeks several people have come to me asking about the safety of biosolids-use in their home gardens, and moreover, have asked why I advocate the use of biosolids. In short, biosolids composts are safe, highly-regulated, sustainable, climate-friendly products, that your plants will LOVE. They are high in nutrients, support healthy soil microbial communities, and improve the tilth (physical attributes) of soil. Farmers around the world, including US farmers, have known this for ages.



Me holding a handful of Groco compost at the Alleycat Acres Beacon Hill site.

The other day I walked into a home improvement center and was inundated by the perfume of synthetic fertilizer. My immediate visceral response was that of revile, which soon followed by nausea and a head ache. I realize that I am particularly sensitive to fertilizer, but these immediate physical responses got me thinking... is it really biosolids that we should be running scared from? This is when it hit me, if I could just tell the world what biosolids really are, we would all lining up to dig our spades into this black gold.

### **What are biosolids?**

Biosolids are a product from the wastewater treatment process, and are EPA-regulated under the Clean Water Act. In US cities, everything we flush, throw down the kitchen sink, and wash down the bathroom shower ends up at the wastewater treatment plant. Some people call biosolids sewage sludge, but the term biosolids specifically refers to *treated* sewage sludge. Here our wastewater gets cleaned

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via a system of filters, and the solids are left behind. While the clean water is either being used for irrigation as "reclaimed water", or sent into our rivers, lakes, or oceans, the solids go under treatment. There are a wide range of ways in which our solids can be treated (like artists, engineers can be quite creative). One popular method is for the solids to go under anaerobic digestion. In this method, industrious microorganisms literally eat the solids. While the microorganisms are feasting, they emit methane gas, which we can be used to power the wastewater treatment facility. During the anaerobic digestion process, pathogenic organisms such as E. coli, salmonella, and helminths either get eaten by the good microorganisms, are heat-destroyed, or a combination of the two, depending on the type of digester. What is eventually left at the end of this process, is no longer the original solids, but mostly the dead (and some live) bodies of the microorganisms who consumed our waste.



A digester tank, used to treat sewage sludge, to make biosolids



Dr. Craig Cogger, one of my graduate advisers, standing next to a pile of biosolids cake. I took this photo immediately before applying the cake to research plots at WSU Puyallup a couple weeks ago.

At this stage we have what is called biosolids "cake". While the cake may be safe to distribute to the public, it is not very easy to use (too wet). So, cake is generally applied to farm land. Here in the PNW, some of our cake is actually applied to timber plantations, which significantly increases the growth rate of our timber forests. Another thing we do with biosolids cake is compost it. Seattle's cake gets composted by Sawdust Supply company, located in the hip Seattle neighborhood of Georgetown. Sawdust Supply mixes the King County cake with sawdust from local timber mills, and composts the combination for over a year. The end result is a light, fluffy, dark compost, that is stable, free of odors, and well... simply beautiful.





Andy Bary, soil scientist from WSU Puyallup, rototilling biosolids into the new research plots. Just look at how beautiful that fine sandy loam is! The soils in Puyallup make me drool.

Before biosolids can be applied to farm land, or distributed to the public for home garden use, they must be vigorously tested, and meet stringent safety regulations. I take comfort in knowing that biosolids are heavily regulated. They are far more heavily regulated than manures, yard waste composts, and fertilizers.



A handful of Groco compost, which is made from King Co. biosolids and sawdust.

### **What about heavy metals?**

In the pre-Clean Water Act days heavy metals were a problem in sewage sludge. At least they were in the handful of places where sewage sludge was actually produced. Realize that in the pre-Clean Water Act days we emitted a lot of raw wastewater into our rivers, lakes, and oceans. As water quality standards have strengthened, the amount of biosolids produced has increased. In addition to eliminating the practice of raw wastewater disposal, the Clean Water Act took aim at reducing heavy metal

concentrations in our wastewater system.

Today we no longer find heavy metals in unsafe concentrations. This is mostly thanks to strict upstream regulation, meaning that industry is monitored and not allowed to dispose of toxic waste into the sewer system.

Somewhat ironically, biosolids can be used to reclaim soils that have been contaminated with heavy metals. My graduate committee chair, Dr. Sally Brown, has used biosolids to clean up seriously contaminated sites, like mine tailings.

### **What about pharmaceuticals and other trace organics?**

Pharmaceuticals and other organic compounds are not regulated in biosolids. This does not mean, however, that this topic has not been researched! When EPA set the guidelines for biosolids regulation, they decided not to regulate substances like PCB's, dioxin, and estrogenic compounds, because concentrations are so incredibly low, that they are rarely found. When these compounds are detected, they are in such low concentrations that risk assessment studies (conducted independently by EPA and several U.S. Universities) find risks to the public and environment to be negligible. Despite the fact that these substances are not federally regulated, public works agencies such as King County biosolids division, routinely monitors for these substances... just to be sure. What are the chances fertilizer producers check, just to be sure?

The fact that substances like dioxin, PCB's, and estrogenic compounds exist in the environment is bad, the fact that they are in background level concentrations in biosolids is good. The fact that government agencies and universities continue to monitor and study these compounds is also good.

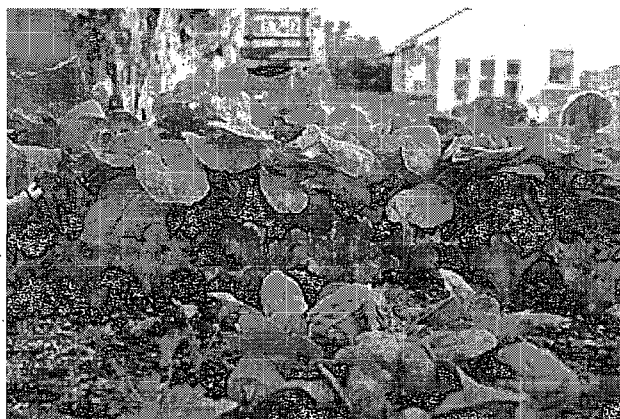
*Food for thought:* manure products that we can buy at nurseries generally come from CAFOs (feed lots), where all of the animals are prophylactically pumped with hormones and antibiotics. At least here in King County there are enough healthy folks and hippies who want natural alternatives to pharmaceuticals that it is only a fraction of us who are excreting meds into the waste stream.

### **Why I am an advocate:**

I am a huge advocate of all compost, including biosolids compost. I use it in my own ornamental and edible beds. It is my feeling that if we are to truly move to a zero waste society, it is our responsibility as citizens to use as many recycled products as possible, including our yard waste, food waste, and biosolids. I purchase quite a bit of compost each year and apply it to my garden beds. Since I live in the city of Seattle I purchase Cedar Grove, a yard waste/food waste compost, Groco, a biosolids/sawdust compost, and Tagro (city of Tacoma), another biosolids-based soil amendment. Also, biosolids compost tends to be very high in plant nutrients, and is an extremely consistent product (little to no seasonal variations), making it a dream for us gardeners. Biosolids are perfect for growing plants, the fact that it is safe is critical, the fact that it is sustainable and therefore responsible to use, well that's just gravy.



My first radish of the season. Grown in soil amended with both biosolids compost.



No fertilizer needed here. Spinach, herbs, lettuce, and radishes growing in one of my veggie boxes.

A few cool sites with great information:

[Northwest Biosolids Management Association \(NBMA\)](#)

[King County biosolids recycling program](#)

[City of Tacoma biosolids recycling/Tagro](#)